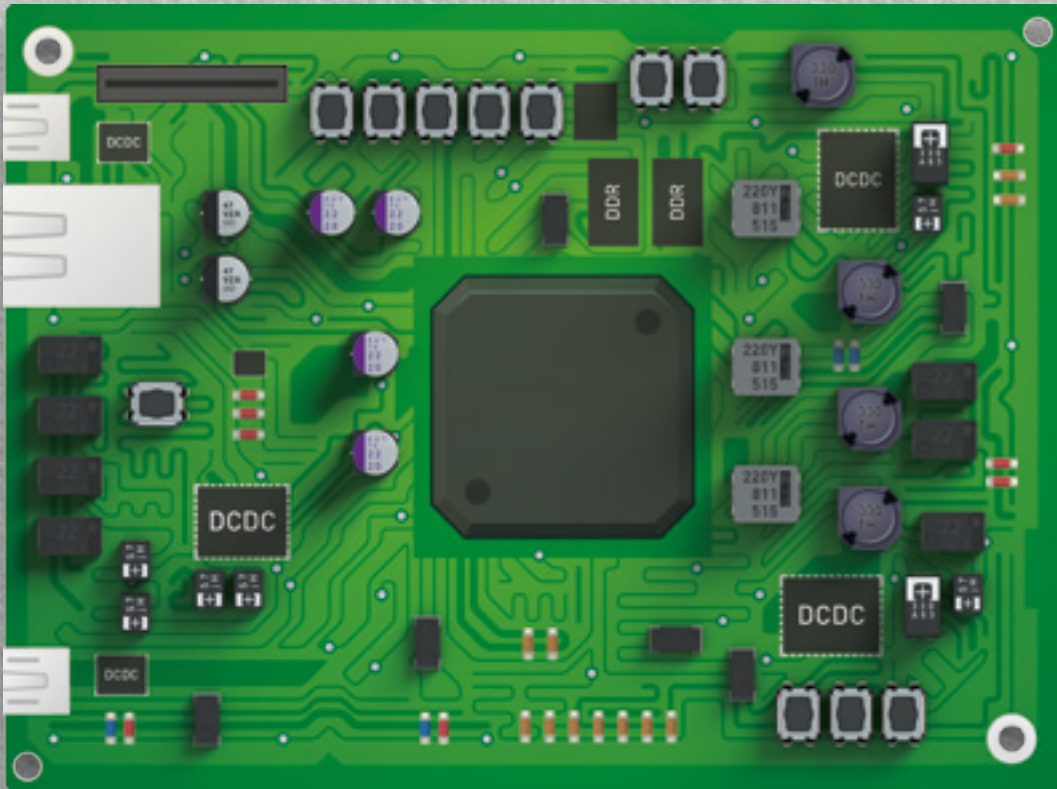


POLYMER CAPACITORS

Speed up your FPGA design



Lower Height

Higher Voltage

SP-Cap

Al Chip Type



Alternative to Tantalum

Super low ESR

POSCAP

TA Chip Type



Miniaturisation

Small case sizes

OS-CON

Al Solid Can Type



Long lifetime

High ripple current

Hybrid

Al Hybrid Can Type



High temperature

High capacitance

The next stage of low ESR capacitors, with high capacitance in small package

- > Widest polymer line-up with lowest ESR in the market
- > Global leader with local technical support
- > Cost optimisation & downsizing of reference solutions

POLYMER CAPACITORS

Speed up your FPGA design

Application Trend

- > High processing CPU / FPGA
- > Higher mounting density, hot spots
- > Longer life at elevated PCB temperature
- > High efficiency power supply design

Increasing Current

Capacitor Requirements

- > Low ESR, high capacitance
- > Small size
- > High voltage
- > Long endurance
- > Stable characteristics
- > Volume performance

Key Features

- SP-Cap** Super low ESR
Low profile
- POSCAP** Small size
High capacitance
- OS-CON** High ripple current
High voltage (100V)
- Hybrid** High temperature
Low LC

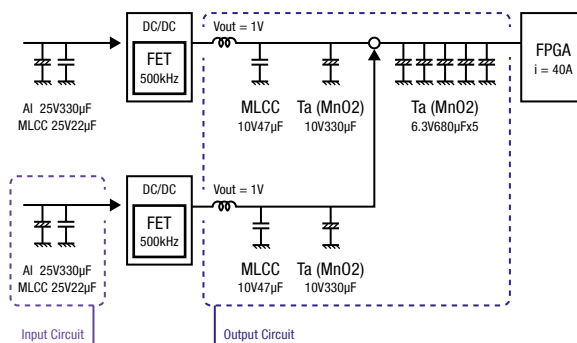
Example for Input/Output power circuit optimisation

Required Ripple Current (Ir)

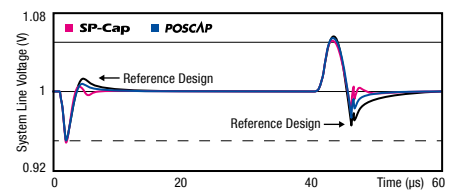
$\geq 2.76 A_{rms}$

$$(I_r) = I_x / ((V_{in} - V_{out}) \times V_{out} / V_{in})$$

(I_{peak} 10A/phase)



Transient Response Simulation



Lifetime Extension

OS-CON

16V, 82µF
Size Ø 5x5.9 mm
Ripple current 3A_{rms}
Lifetime 5000 h, 105°C
(equal to 50.000 h, 85°C)



OR

Hybrid

25V, 100µF
Size Ø 6.3x7.7 mm
Ripple current 2A_{rms}
Lifetime 10000 h, 105°C
(equal to 40.000 h, 85°C)



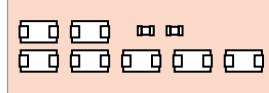
Typical Design

Lytic MLCC



2 pcs
Ø 8x10 mm

Bulk MLCC



9 pcs
Area 219.7 mm²

Space & Cost Saving

SP-Cap

2V, 560µF
ESR 3mΩ

1 pc

Cost Index
0.23
Area
31.4 mm²

OR

POSCAP

each 2.5V, 220µF
ESR 15mΩ

3 pcs

Area
29.2 mm²
Cost Index
0.32

**Reduce
~85%**



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